

#50 WRITE AN EQUATION $y = mx + b$ FOR THE LINE THAT CONTAINS THE GIVEN POINT AND IS PERPENDICULAR TO THE GIVEN LINE

$$(5, -2) \quad 2x - 5y = 15$$

$$\begin{array}{r} \textcircled{1} \textcircled{2p} \quad + -2x \quad \quad + -2x \\ -5y = -2x + 15 \\ \hline -5 \quad \quad -5 \quad \quad -5 \end{array}$$

$$y = \left(\frac{2}{5}\right)x - 3$$

$$\textcircled{2} \textcircled{1p} \quad m_1 = \frac{2}{5} \quad m_2 = -\frac{5}{2}$$

$$\textcircled{3} \textcircled{2p} \quad y - y_1 = m(x - x_1)$$

$$y - -2 = -\frac{5}{2}(x - 5)$$

$$y + 2 = -\frac{5}{2}(x - 5)$$

$$\textcircled{4} \textcircled{2p} \quad \begin{array}{r} y + 2 = -\frac{5}{2}x + \frac{25}{2} \\ -2 \quad \quad -2 \end{array}$$

$$\boxed{y = -\frac{5}{2}x + \frac{21}{2}}$$